

Appl. No. 10/014,310

REMARKS

Claims 32, 34-36, 38-40, 42, 43, 47, 49-51, 53-55, 57, 58, 61, 68-75, 83, and 84 are pending in the application with claims 68, 83, and 84 amended herein.

Claims 83-84 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. Claims 83 and 84 are amended herein so as to be literally supported by Figs. 4-6 of the present specification and the text associated therewith. Applicant requests withdrawal of the written description requirement in the next Office Action.

Claims 32, 34-36, 38-40, 42-43, 47, 49-51, 53-55, 57-58, 61, 68-75 and 83-84 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,348,139 B1 in view of Ohhashi. Applicant notes that a timely-filed terminal disclaimer was previously submitted for US Patent No. 6,348,139 on December 1, 2003 and is of record in the Office's Image File Wrapper. Applicant requests withdrawal of the double patenting rejection in the next Office Action.

Claims 32, 34-36, 38-40, 42-43, 47, 49-51, 53-55, 57-58 and 61 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Klose et al. DD 284,905 A5 (Klose). Applicant requests reconsideration.

Claim 32 sets forth a tantalum disc that includes, among other features, a maximum tantalum grain size of less than 50 microns at the disc surface. Page 4 of the Office Action acknowledges that Klose does not

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explicitly teach the claimed maximum grain size, but alleges that those of ordinary skill would expect the tantalum grains of Klose to inherently meet the claimed maximum grain size. However, the Office's allegation is not supported in the prior art nor by any other evidence. Also, Applicant asserts that the Office Action fails to establish a prima facie case of obviousness.

The mere fact that the tantalum in Klose might have a maximum grain size of 50 microns is not sufficient to establish inherency. "In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis added); MPEP § 2112. The Office Action does not provide any evidence or technical reasoning to support the conclusion that the tantalum in Klose necessarily has a maximum grain size of 50 microns. Instead, the Office Action merely states that those of ordinary skill would have "highly expected" the tantalum in Klose to have a maximum grain size of 50 microns since Klose's average grain size is less than half of the claimed 50 microns. Such allegations contradict the well known fact that grain sizes can be widely distributed and the maximum grain size can be many times larger than the average grain size. Applicant herewith cites US Patent App. Pub. No. 2003/0052000 A1 (Segal) documenting Applicant's assertions.

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At least paragraphs 30-34, 45, and 46 of Segal discuss and show the problems of a wide grain size distribution. Paragraph 33 states that tantalum and copper "suffer from non-uniformity of grain sizes in the form of duplex grain structure." Fig. 6 of Segal shows duplex, non-uniform structures of tantalum produced by conventional thermo-mechanical processing techniques, such as those used in Klose (see the "Exemplified Embodiment"). Copper, like tantalum, also suffers from grain size non-uniformity. Fig. 9A of Segal shows copper with 1% of its area having grains exhibiting a grain size at least 6.1 times higher than the mean grain size of 20.7 microns. This is calculated from the data in paragraph 46 (as understood from the explanation in paragraph 45), stating that 99% of the area had grain size areas less than 37 times the mean grain size area of 336.5 microns^2 (i.e. less than $12,450 \text{ microns}^2$). Grains with an area of $12,450 \text{ microns}^2$ have a grain size of 125.9 microns, which is 6.1 times the mean grain size of 20.7 microns.

Accordingly, the Office Action does not provide adequate evidence or technical reasoning to support the conclusion that the tantalum in Klose necessarily has a maximum grain size of 50 microns. Those of ordinary skill would not have "highly expected" the tantalum in Klose to have a maximum grain size of 50 microns. Those of ordinary skill instead recognize that tantalum, like copper, suffers from non-uniformity of grain sizes and may exhibit a maximum grain size many times larger than the average grain size.

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At least for such reasons, Klose does not inherently disclose the claimed maximum grain size.

Applicant notes that it does not bear any burden to show that Klose necessarily discloses a maximum grain size of greater than 50 microns. Instead, the entire burden is upon the Office to show that Klose necessarily discloses a maximum grain size less than 50 microns. Applicant cites Segal merely to show that the Office's conclusions are inconsistent with the knowledge of those skilled in the art. Applicant further asserts that Klose fails to provide the required support for a finding of inherency.

Page 4 of the Office Action alleges that Applicant has not shown the criticality of the claimed maximum grain size of less than 50 microns. However, no such showing is required since the Office Action fails to establish a prima facie case of obviousness. Prima facie obviousness requires Klose to suggest that those of ordinary skill should make the claimed composition. Klose does not disclose or suggest and the Office Action does not allege that it discloses or suggests the significance of a maximum grain size. A wide range of grain size distributions may be formed in the tantalum of Klose. However, Klose does not disclose or suggest any motivation to make tantalum alloy for spinnerets with the claimed maximum grain size. In the previous Response to April 21, 2005 Office Action, Applicants established a clear advantage to a maximum grain size in the context of sputtering, but no advantage appears to exist in the context of the

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Klose spinnerets. Accordingly, Klose cannot be considered to suggest that those of ordinary skill should make the claimed composition.

Prima facie obviousness also requires that Klose reveal a reasonable expectation of success in making the claimed composition. The present specification lists a specific method based upon described principles designed to produce a maximum grain size of 50 microns. Klose does not provide any comparable teaching and cannot be considered to provide a reasonable expectation of success. Any of the wide variety of grain size distributions known to those of ordinary skill can result from the teachings of Klose.

Accordingly, Klose does not inherently disclose a maximum tantalum grain size of less than 50 microns, as claimed. Also, Klose does not suggest that those of ordinary skill should make the claimed composition. Further, Klose does not reveal a reasonable expectation of success. Still further, Klose does not disclose or suggest every claim limitation. At least for such reasons, claim 1 is patentable over Klose. As may be appreciated from the deficiencies of Klose as applied to claim 1, claims 34-36, 38-40, 42-43, 47, 49-51, 53-55, 57-58 and 61 are also patentable.

Claims 68-75 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Klose in view of Ohhashi et al. U.S. 5,415,829(Ohhashi). Applicant requests reconsideration.

Applicant herein incorporates by reference the remarks on pages 11-13 of the Response to April 21, 2005 Office Action establishing that Klose is


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with which the inventor was concerned. The Office Action does not establish that Klose logically would have commended itself to an inventor's attention in considering the inventor's problem. The Office Action does not establish that the subject matter disclosed in Klose is relevant to the particular problem with which the inventor was involved. Accordingly, Klose cannot be considered to be analogous art.

Applicant herein establishes adequate reasons supporting patentability of all pending claims and requests their allowance in the next Office Action.

Respectfully submitted,

Dated: 04 Jan 2006

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